REMARKS

CLAIMS

REJECTION OF INDEPENDENT CLAIM 19 UNDER 35 U.S.C. § 103(a)

Claim 19 was rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0129290 ("Couilard") in view of U.S. Patent Application Publication No. 2005/0041692 ("Kallstenius").

The Applicants respectfully submit that Couilard is not combinable with Kallstenius because Couilard teaches away from its combination with Kallstenius. Couilard, at paragraph [0047], for example, discloses that "[t]he time server 3 processes said time stamped first synchronization signal using processor 9 to determine a *time offset value* for synchronizing timing device 4 in dependence upon a difference between the local time of receipt of the first synchronization signal at the first client station, the expected local time of receipt of the first synchronization signal at the first client station and the determined round trip delay time of the first synchronization signal caused by the communications network 2." Since Couilard utilizes a time offset value to synchronize the time server to the client, Couilard teaches away from using a network time protocol (NTP) (which uses absolute time), as disclosed in Kallstenius. Consequently, Couilard teaches away from its combination with Kallstenius. Therefore, for at least this reason, a prima facie case of obviousness has not been established. Consequently, the Applicants request allowance of Claim 19. Furthermore, for at least the reason that Claim 19 is allowable, its corresponding dependent claims (i.e., Claims 20-25) are allowable as well.

Furthermore, the Examiner has not provided any motivation from the cited references to combine the teachings of the cited references. Therefore, for at least this reason, a prima facie

case of obviousness has not been established. Consequently, the Applicants believe that Claim 19 contains patentable subject matter, which should be advanced to allowance.

Furthermore, for at least the reason that Claims 20-25 depend on an allowable Claim 19, Claims 20-25 should be allowed. The Applicants reserve the right to argue additional reasons beyond those set forth above to support the allowability of Claims 20-25 in any future response. Thus, based on the foregoing reasons, the Applicants respectfully request allowance of Claims 19-25.

REJECTION OF CLAIMS 26-27 UNDER 35 U.S.C. § 103(a)

The Examiner states that he has rejected Claims 26-27 and 40-42 [sic] under 35 U.S.C. § 103(a) "as being unpatentable over Couilard in view of Kallstenius and U.S. Patent Application Publication No. 2002/0027886 ("Fischer") as applied to Claim 6 above [sic], and further in view of U.S. Patent No. 5,450,395 ("Hostetter")." Thus, the Examiner has rejected Claims 26-27 over four references.

Independent Claim 26

Regarding Claim 26, the Office Action states:

> Regarding claim 26, Couilard teaches a method of transmitting higher bandwidth signals between a first computing device and a second computing device comprising synchronizing said first computing device and a second computing device by way of using network time protocol (NPT) server (paragraphs [0047]-[0052]).
>
> Kallstenius teaches a client 16 requests absolute time by way using (transmitting) a network time protocol (NPT) message to timeserver 12 (see paragraph [0038]).

> Fischer teaches a method of transmitting voice and voice band data and other higher bandwidth signals between a first computing device and a second computing device comprising synchronizing said first computing device and a second computing device (paragraphs [0084]-[0085] and [0387]).
>
> It should be noticed that Couilard, Kallstenius and Fischer, in combination, fails to suggest using synchronization to improve signal to noise of two devices. However, Hostetter teaches a suggestion of improving the signal-to-noise ratio between a plurality of transmitter and a receiver by a way of the transmitters and receive to be synchronized (col.1, lines 55-60).
>
> Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of the features of a suggestion of improving the signal-to-noise ratio between a plurality of transmitter and a receiver by a way of the transmitters and receive to be synchronized, as taught by Hostetter into view of Couilard, Kallstenius and Fischer in order to better quality of voice to voice-over-IP services.
>
> *See* Office Action at pages 4-5.

Claim 26 recites "a method of transmitting higher bandwidth voice band data between a first computing device and a second computing device comprising synchronizing said first computing device to said second computing device by way of using a network time protocol (NTP) server, said synchronizing performed to improve signal to noise ratio of said voice band data received at said first computing device and said second computing device."

The Office Action alleges that Couilard, at paragraphs [0047]-[0052], discloses "a method of transmitting higher bandwidth voice band data between a first computing device and a second computing device comprising synchronizing said first computing device to said second computing device *by way of using a network time protocol (NTP) server*." Couilard, at paragraphs [0047]-[0052], states:

The liming devices 4 and 6 of the first and second client stations 1 and 5, respectively, are synchronized independently of one another to the timing device 22 of the time server 3. In step 200 the first client station 1 receives a first synchronization signal from the time server 3 via the communications network 2 and attaches a local time of receipt of said first synchronization signal. Conveniently, when the timing device 4 is embodied on a time stamping cipher module of the first client station, the first client station 1 simply time stamps the first synchronization signal using a time value provided by the timing device 4. Advantageously, the time stamp may further include an authenticator for identifying the first client station 1. The first client station 1 returns the time stamped first synchronization signal to the time server 3. Upon receipt of the time stamped first synchronization signal at the time server 3, the time server 3 determines a round trip delay time of the first synchronization signal caused by the communications network 2. The time server 3 processes said time stamped first synchronization signal using processor 9 to determine a time offset value for synchronizing timing device 4 in dependence upon a difference between the local time of receipt of the first synchronization signal at the first client station, the expected local time of receipt of the first synchronization signal at the first client station and the determined round trip delay time of the first synchronization signal caused by the communications network 2. Time server 3 sends a signal in dependence upon the determined time offset value to the first client station 1 via the communications network 2. Processor 7 of client station 1 adds said time offset value to the local time value maintained by timing device 4. Of course, the time server is a "read only" device, such that synchronization between the first client station 1 and the time server 3 is effected by adjusting only the value maintained by timing device 4 of the first client station 1.

In step 201 the second client station 5 receives a second synchronization signal from the time server 3 via the communications network 2 and attaches a local time of receipt of said second synchronization signal. Conveniently, when the timing device 6 is embodied on a time stamping cipher module of the second

client station, the second client station 5 simply time stamps the second synchronization signal using a time value provided by the timing device 6. Advantageously, the time stamp may further include an authenticator for identifying the second client station 5. The second client station 5 returns the time stamped second synchronization signal to the time server 3. Upon receipt of the time stamped second synchronization signal at the time server 3, the time server 3 determines a round trip delay time of the second synchronization signal caused by the communications network 2. The time server 3 processes said time stamped second synchronization signal using processor 9 to determine a time offset value for synchronizing timing device 6 in dependence upon a difference between the local time of receipt of the second synchronization signal at the second client station, the expected local time of receipt of the second synchronization signal at the second client station and the determined round trip delay time of the second synchronization signal caused by the communications network 2. Time server 3 sends a signal in dependence upon the determined time offset value to the second client station 5 via the communications network 2. Processor 8 of client station 5 adds said time offset value to the local time value maintained by timing device 6. Of course, the time server is a "read only" device, such that synchronization between the second client station 5 and the time server 3 is effected by adjusting only the value maintained by timing device 6 of the second client station 5.

Similarly, in step 202 the first client station 1 and the second client station 5., [sic] synchronize with each other via the communications network 2. The first client station 1 time stamps a third synchronization signal with a time of transmission using a local time provided by timing device 4. The first client station 1 transmits said third synchronization signal to the second client station 5 via the communications network 2. Upon receipt of said third synchronization signal the second client station 5 time stamps the third synchronization signal with a local time of receipt provided by the timing device 6 and returns said time stamped third synchronization signal to the first client station 1 via the communications network 2. Upon receipt of the time stamped third

synchronization signal at the first client station 1, the first client station 1 determines a round trip delay time of the third synchronization signal caused by the communications network 2. The first client station 1 processes said time stamped third synchronization signal using processor 7 and determines synchronization data for synchronizing timing device 4 and timing device 6 in dependence upon a difference between the local time of receipt of the third synchronization signal at the second client station 5, the expected local time of receipt of the third synchronization signal at the second client station 5 and the determined round trip delay time of the third synchronization signal caused by the communications network 2.

Timing devices 4 and 6 are synchronized. Processor 7 of client station 1 uses said synchronization data to adjust a local time value maintained by timing device 4 to be approximately a same time value as the local time value maintained by timing device 6. More preferably, processor 7 of client station 1 transmits a signal including said synchronization data to client station 5. Processor 7 of client station 1 and processor 8 of client station 5 use said synchronization data to adjust the local time values maintained by each of timing devices 4 and 6, respectively, to be a time value approximately intermediate the two local time values maintained by each of timing devices 4 and 6.

Step 203 is optionally performed, wherein the system determines a value relating to a precision of the synchronization method based on the first set of synchronization signals.

The steps 200, 201 and 202 as described above are repeated at steps 200a, 201a and 202a. For instance a second set of synchronization signals are exchanged for performing the method outlined with reference to steps 200, 201 and 202. Having performed steps 200, 201 and 202 and steps 200a, 201a and 202a, the system determines at step 204 statistical data relating to a precision of the synchronization and to a convergence of the synchronization method based on the first set of synchronization signals or the value relating to a precision of the synchronization determined optionally in step 203, and the second set of

> synchronization signals. The statistical data determined at step 204 is compared to threshold values at step 205 to determine if the precision of the synchronization is within a predetermined tolerance. The predetermined tolerance varies in dependence upon the level of precision and accuracy that are required by each unique system. When the precision of the synchronization is within a predetermined tolerance the system is synchronized and the method terminates at step 207.

While Couilard, at paragraphs [0047]-[0052], discloses a "time server," nowhere does Couilard disclose anything about a network time protocol (NTP) server, as alleged by the Examiner. Therefore, for at least this reason, Couilard does not teach Claim 26. Therefore, Claim 26 contains patentable subject matter that should be passed to allowance.

The Office Action alleges that Kallstenius, at paragraph [0038], teaches "a client 16 requests absolute time by way using (transmitting) a network time protocol (NPT) message to timeserver 12." However, Claim 26 does not recite anything about "request[ing] absolute time by way using (transmitting) a network time protocol (NPT) message to timeserver 12." Thus, the Examiner does not show a teaching of what is recited in Claim 26. Therefore, for at least this reason, Claim 26 contains patentable subject matter which should be advanced to allowance.

Kallstenius, at paragraph [0038], states:

> The client 16 sends a timestamp message M, e.g., a procedure-class NTP message, to the timeserver 12 which echoes the message M back to the client 16. When sending the message, the client 16 inserts a local time (absolute time) t_1 output by its timer 34 in the message M (1). The timeserver 12 receives the message M and adds the local time t_2 output by its timer 22 to the message (2). The timeserver 12 sends the message M back to the client 16 at time t_3 (3) and inserts the local time t_3 into the message M. The client 16 receives the message M

at local time t_4 (4) and inserts t_4 into the message M.

The Office Action alleges that Hostetter, at col. 1 lines 55-60, teaches "said synchronizing performed to improve signal to noise ratio of said voice band data," as recited in Claim 26. While Hostetter, at col. 1 lines 55-60, may teach improving the signal to noise ratio of a CDMA receiver by way of using direct sequence spectrum techniques, Hostetter, does not teach anything about "improving the signal to noise ratio of *voice band data*," as recited in Claim 26. For example, Hostetter, at Col. 1, line 60 to Col. 2, line 15 states:

> Each transmitter sends a data signal spread by a bipolar pseudo-random code which is a different assigned shift of a common bipolar code sequence. The receiver has a plurality of correlation detectors, each generating two local bipolar pseudo-random codes that are replicas of the transmitter codes. One of the locally generated codes has the same code sequence shift as the code assigned to the predetermined transmitter. Horwitz notes that in spread spectrum communications spreading of the signal bandwidth beyond the bandwidth normally required for data being transmitted is done by phase shift keyed (PSK) *modulating a carrier waveform by the data to be transmitted.* Then the resultant signal is modulated by a reference pseudo-random code of length L running at a repetition rate which is normally twice the data rate. Demodulating involves heterodyning or multiplying the signal by the same reference code used to spread the composite transmission.

Thus, Hostetter, at Col. 1, line 60 to Col. 2, line 15 describes improving a signal to noise ratio of a *carrier signal* received by a CDMA receiver over a direct sequence spread spectrum. Therefore, for at least this reason, Hostetter does not teach "improving the signal to noise ratio of *voice band data*," as recited in Claim 26. Hence, the Office Action does not show a teaching of

what is recited in Claim 26. Thus, for at least this reason, Claim 26 contains patentable subject matter.

> Assuming that the transmitted and locally generated receiver codes are synchronous, the carrier inversions caused by the code PSK modulation are removed and the original base-band modulated carrier is restored by the receiver.

Therefore, Hostetter, at Col. 1 line 60 to Col. 2 line 15, discloses demodulating a carrier signal by a receiver.

In addition, the Applicants respectfully submit that Couilard is not combinable with Kallstenius because Couilard teaches away from its combination with Kallstenius. Couilard utilizes a time server such that "[t]he time server 3 processes said time stamped first synchronization signal using processor 9 to determine a *time offset value* for synchronizing timing device 4 in dependence upon a difference between the local time of receipt of the first synchronization signal at the first client station, the expected local time of receipt of the first synchronization signal at the first client station and the determined round trip delay time of the first synchronization signal caused by the communications network 2." Consequently, since Couilard utilizes a time offset value to synchronize the time server to the client, Couilard teaches away from using a network time protocol (NTP) (which uses absolute time), as disclosed in Kallstenius. Therefore, Couilard teaches away from its combination with Kallstenius. Therefore, for at least this reason, a prima facie case of obviousness has not been established.

In addition, the Examiner has not provided a motivation obtained from the cited references to combine the teachings of the four cited references. Therefore, for at least this reason, a prima facie case of obviousness has not been established. Consequently, the rejection to Claim 26 should be withdrawn.

Furthermore, for at least the reason that Claim 27 depends on an allowable Claim 26, Claim 27 should be allowed. The Applicants reserve the right to argue additional reasons beyond those set forth above to support the allowability of Claim 27 in any future response. Thus, based on the foregoing reasons, the Applicants respectfully request allowance of Claims 26-27.

REJECTION OF CLAIM 28 UNDER 35 U.S.C. § 103(a)

Claim 28 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Hostetter et al. (Us. Pat. #: 5,450,395) in view of Kallstenius and Ransom et al. (U.S. Patent Application Publication No. 2003/0204756 ("Ransom")). Regarding Claim 28, the Office Action states:

> ***Regarding claim 28***, Hostetter et al. ("Hostetter") teaches a method of improving the signal to noise ratio of voice band data comprising synchronizing computing devices (col.1, lines 55-60).
>
> Kallstenius teaches a client 16 requests absolute time by way using (transmitting) a network time protocol (NPT) message to timeserver 12 (see paragraph [0038]).
>
> It should be noticed that Hostetter and Kallstenius fails to clearly teach the feature of syncing the computing devices to an NTP server. However, Ransom teaches such feature in paragraph [0122] for ensuring transferred messages having the correct time and their contents having accurate time.
>
> Therefore, it would have been obvious to one ofordinary skill in the art at the time the invention was made to incorporate the use ofthe feature of syncing the computing devices to an NTP server, as taught by Ransom, into view of Hostetter and Kallstenius in order to provide accurate time to the transmitted messages.

See Office Action at pages 5-6.

Claim 28 recites "a method of improving the signal to noise ratio of voice band data comprising synchronizing one or more computing devices to a network time protocol (NTP) server."

As the Applicants had pointed out in Claim 26, Hostetter, at col. 1 lines 55-60, describes a signal to noise ratio of a *carrier signal* received by a CDMA receiver over a direct sequence spread spectrum. Therefore, for at least this reason, Hostetter does not teach "improving the signal to noise ratio of *voice band data*," as recited in Claim 28. Hence, the Office Action does not show a teaching of what is recited in Claim 28. Consequently, a prima facie case of obviousness has not been established.

In addition, the Examiner has not provided a motivation obtained from the cited references to combine the teachings of the three cited references. Therefore, for at least this reason, a prima facie case of obviousness has not been established.

Consequently, based on the foregoing reasons, the rejection to Claim 28 should be withdrawn. Thus, for at least this reason, the Applicants respectfully submit that Claim 28 is in condition for allowance.

ALLOWABLE SUBJECT MATTER

Claims 11-17, 30-34, and 36-47

As stated on page 6 of the Office Action, the Examiner has allowed Claims 11-17, 30-34, and 36-47. The Applicants appreciate and gratefully acknowledge the indication by the Examiner that Claims 11-17, 30-34, and 36-47 are allowed.

New Claims 48-50

New independent Claim 48 is drawn to an apparatus that comprises the allowable elements and/or features presented in allowable method Claim 11. In other words, Claim 48 reflects the allowable subject matter recited in Claim 11. Therefore, new independent Claim 48 is in condition for allowance. New dependent Claims 49-50 are drawn to an apparatus that mirrors the subject matter recited in allowable dependent Claims 16-17, respectively. Therefore, Claims 16-17 are allowable as well. Furthermore, Claims 49-50 are in condition for allowance for at least the reason that they depend on an allowable Claim 48. Thus, the Applicants request allowance of Claims 48-50.

New Claims 51-56

The Examiner has objected to Claims 21-24 as being dependent upon a rejected base claim, but would be allowable if rewritten in correct and independent form including all of the limitations of its base claim and any intervening claims. Therefore, the Applicants have incorporated the subject matter of Claim 21 into independent Claim 19, and have presented the patentable subject matter as new independent Claim 51. Furthermore, the subject matter of dependent Claims 20 and 22-25 has been presented as new dependent Claims 52-56. Thus, new Claims 51-56 are in condition for allowance.

CONCLUSION

Based on at least the foregoing, the Applicants believe that Claims 11-17, 19-34, and 36-56 are in condition for allowance. Therefore, a Notice of Allowance is courteously solicited. Should anything remain in order to place the present Application in condition for allowance, or should the Examiner disagree or have any question regarding this submission, the Examiner is kindly invited to contact the undersigned at (312) 775-8246.

The Commissioner is hereby authorized to charge any additional fees or credit any overpayment to the Deposit Account of McAndrews, Held & Malloy, Ltd., Account No. 13-0017.

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Respectfully submitted,

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